[0055] All publications and published patent documents cited in this specification are incorporated herein by reference to the same extent as if each individual publication or patent application was specifically and individually indicated to be incorporated by reference.

Claims

[c1]

1. A DNA molecule isolated from cotton tissue identified as SEQ ID NO:7.

[c2]

2. A primer pair of DNA molecules comprising a sufficient length of contiguous nucleotides of SEQ ID NO:7 or complements thereof wherein a first DNA molecule of the primer pair resides in a transgene insert DNA sequence of SEQ ID NO:7 and a second DNA molecule of the primer pair resides in the cotton genomic DNA sequence of SEQ ID NO:7 and the pair of DNA molecules are useful as DNA nucleotide primers in a DNA amplification method.

[c3]

3. A DNA molecule isolated from cotton tissue identified as SEQ ID NO:8.

[c4]

4. A primer pair of DNA molecules comprising a sufficient length of contiguous nucleotides of SEQ ID NO:8 or complements thereof wherein a first DNA molecule of the primer pair resides in a transgene insert DNA sequence of SEQ ID NO:8 and a second DNA molecule of the primer pair resides in the cotton genomic DNA sequence of SEQ ID NO:8 and the pair of DNA molecules are useful as DNA nucleotide primers in a DNA amplification method.

[c5]

5. A method of detecting the presence of DNA corresponding to the genomic/transgene DNA of cotton event PV-GHGT07(1445) event in a sample, the method comprising:

(a) contacting the sample comprising cotton DNA with a primer pair of claim 2, that when used in a nucleic-acid amplification reaction with DNA from cotton event PV-GHGT07(1445), produces an amplicon that is diagnostic for cotton event PV-GHGT07(1445); and

(b) performing a nucleic acid amplification reaction, thereby producing the amplicon; and

(c) detecting the amplicon.

[c6]

6. An isolated DNA molecule comprising the amplicon produced by the method of claim 5.

[c7]

7. A DNA detection kit specific for genomic/transgene DNA of cotton event PV-GHGT07(1445) and its progeny comprising at least one DNA molecule of sufficient length of contiguous DNA polynucleotides to function in a DNA detection method, that is homologous or complementary to SEQ ID NO:7.

[c8]

8. A method of detecting the presence of DNA corresponding to the genomic/transgene DNA of cotton event PV-GHGT07(1445) event in a sample, the method comprising:

(a) contacting the sample comprising cotton DNA with a primer pair of claim 4, that when used in a nucleic-acid amplification reaction with DNA from cotton event PV-GHGT07(1445), produces an amplicon that is diagnostic for cotton event PV-GHGT07(1445); and

(b) performing a nucleic acid amplification reaction, thereby producing the amplicon; and

(c) detecting the amplicon.

[c9]

9. An isolated DNA molecule comprising the amplicon produced by the method of claim 8.

[c10]

10. A DNA detection kit specific for genomic/transgene DNA of cotton event PV-GHGT07(1445) and its progeny comprising at least one DNA molecule of sufficient length of contiguous DNA polynucleotides to function in a DNA detection method, that is homologous or complementary to SEQ ID NO:8.

[c11]

11. A method of detecting the presence of a genomic/transgene DNA corresponding to the PV-GHGT07(1445) event in a sample, the method comprising:

(a) contacting the sample comprising cotton DNA with a polynucleotide probe that hybridizes under stringent hybridization c nditions with DNA from cotton event PV-

GHGT07(1445) and does not hybridize under the stringent hybridization conditions with a non PV-GHGT07(1445) cotton plant DNA; and

(b) subjecting the sample and probe to stringent hybridization conditions;

(c) detecting hybridization of the probe to the DNA.

[c12]

12. An isolated DNA molecule comprising a genomic/transgene DNA junction sequence of cotton event PV-GHGT07(1445) identified as SEQ ID NO:5 or DNA molecules substantially homologous to said DNA molecule or complements thereof.

[c13]

13. An isolated DNA molecule comprising a genomic/transgene DNA junction sequence of cotton event PV-GHGT07(1445) identified as SEQ ID NO:6 or DNA molecules substantially homologous to said DNA molecule or complements thereof.

[c14]

14. A method of breeding a cotton plant comprising a glyphosate tolerant trait that is genetically linked to a complement of a marker nucleic acid, wherein said marker nucleic acid molecule is SEQ ID NO:5 or SEQ ID NO:6 or complements thereof.

[c15]

15. A method of determining the genomic/transgene DNA zygosity of the progeny of cotton Plant PV-GHGT07(1445) comprising:

(a) contacting the sample comprising cotton DNA with a primer set comprising SEQ ID NO:9, SEQ ID NO:11 and SEQ ID NO:12, that when used in a nucleic-acid amplification reaction with genomic DNA from cotton event PV-GHGT07(1445), produces a first amplicon that is diagnostic for cotton event PV-GHGT07(1445); and

(b) performing a nucleic acid amplification reaction, thereby producing the first amplicon; and

(c) detecting the first amplicon; and

(d) contacting the sample comprising cotton DNA with said primer set, that when used in a nucleic-acid amplification reaction with genomic DNA from cotton plants produces a second amplicon comprising the native cotton genomic DNA homologous to the cotton genomic region of a transgene insertion identified as cotton event PV-GHGT07(1445); and

(e) performing a nucleic acid amplification reaction, thereby producing the second amplicon; and

(f) detecting the second amplicon; and

(g) comparing the first and second amplicons in a sample, wherein the presence of both amplicons indicates the sample is heterozygous for the transgene insertion.

[c16]

16. An isolated DNA nucleotide primer sequence comprising SEQ ID NO:9 or its complement.

[c17]

17. An isolated DNA nucleotide primer sequence comprising SEQ ID NO:10 or its complement.

[c18]

18. An isolated DNA nucleotide primer sequence comprising SEQ ID NO:11 or its complement.

[c19]

19. An isolated DNA nucleotide primer sequence comprising SEQ ID NO:12 or its complement.

[c20]

20. An isolated DNA molecule comprising the first amplicon produced by the method of claim 15.

[c21]

21. An isolated DNA molecule comprising the second amplicon produced by the method of claim 15.